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Content and Abstracts

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Abstract - ***The team which elaborate this paper with anniversary character, present concisely, as collaborators, the most representative activities and preoccupations of Professor Engineer Pompiliu Nicolau in Sanitary Engineering, which he realized during his longest and fruitful activity performed in the studies department with hydrotechical character, in research, in technique and in superior education. Professor Engineer Pompiliu Nicolau studied and get thoroughly into fluid mechanics problems, bringing valuable contributions to the technical realizations and development program of hydrotechnical constructions, hydrotechnical arrangements, navigation, land reclamation and improvements and sanitary engineering.***
***Keywords*: Professor Engineer Pompiliu Nicolau, sanitary engineering domain**

Abstract* - *In paper are presented the main equipments of specialty laboratory for the study of water sewage and water treatment processes, respective of water distribution and wastewater collection in sewage networks. The arranged research stands contribute essential to didactic activity and scientific research perfecting, also contribute to student scientific research development and PhD thesis elaboration. In paper are presented some of the realization obtained through direct guidance of Prof. Pompiliu Nicolau, together with Prof. Vasile Zbegan in the active period of these distinguished teachers and specialists as well as realizations initiated till 1972 and after finalized in the next periods of time.
***Keywords*: equipments, special laboratory, water sewage and water treatment processes, wastewater collection**

Abstract* - *In paper are presented deformation state and unit stresses at an earthen dam with clay core (Săcele Dam, H_{max} = 45m), in the most unfavorable situation, submit to a dynamic action of a calculus earthquake (amplification 1/3 from El-Centro earthquake accelerograma, horizontal component, in time sequence: 0 – 5.45 seconds). In numerical simulation were considerate unlinear geometrical behavior of structure and unlinear behavior of materials from dam's body and underground, the dynamic answer being obtained by direct integration "step by step". There are presented some significant variations of deformations and unit stresses in comparison with time, in some points of efforts maximum amplification from dam's body and material plasticity areas.
***Keywords*: deformation state, unit stresses, earthen dam with clay core**

Abstract* - *The reopening of navigation on Bega Channel was and still a major desideration of people from this part of the country having an uncontestable economic importance, Must be mentioned two aspects: the channel can be reopened at initial parameters or can be totally rearranged and extended. In actual economic situation is considered to be more suitable the first option through which with minimum investments can be reopen this navigable way.
***Keywords*: reopening, navigation, Bega Channel**

Abstract* - *Roller compacted-concrete (RB) dams, represent a significant progress in dam's construction and design. Roller compacted-concrete was developed in the '80, and its use for new dams as well as for the rehabilitation of the existing ones, can make great progress in future. This paper intends to be information over the advantages which RB brings, as component materials and technology. Also, in paper are mentioned some of the countries in which RB was used with success, which conduct to a reduction of execution periods, costs as well as important economies of manual labor and cement.
***Keywords*: Roller compacted-concrete, dams, new technology**

Abstract* - Statistical models are used for processing and interpretation of dates obtained from hydrotechnical constructions surveillance. They permit correlations between causes (actions over constructions) and effects (the construction's answer in deformations, efforts, infiltrations, etc.), as well as the emphasizing distinctive influences of some causes over the answer. On this base can be alerted and prevented abnormal situation of behavior. In paper are described comparative some statistical models applied in dams surveillance. In final are given more examples of their appliance at Gura Râului dam. *Keywords*: Statistical models, hydrotechnical constructions surveillance

***Abstract* - Wave's generation process is represented by wind energy transmitted to water surface. Wave energy depends on wind intensity and duration on the surface on which action. During a storm, sea surface is composed by waves of different heights and directions so that sea state cannot be represented in a determinist form. We can consider that the wave is a random phenomenon, governed by a probabilistic law. In sea construction design is necessary to know the sea state for a long period of time (20 – 50 years). It is possible to isolate an average sea state and to be obtained a global state model, from statistical distribution of short time parameters. This paper proposes to check the values accuracy obtained with different spectral models which correspond to Black Sea case.**
***Keywords*: Statistical parameters, marine waves, Black Sea, wind energy**

***Abstract* - By integrating this pressure over the hull surface we find the Froude-Krillof force. By the nature of Froude-Krillof force its amplitude has to be independent of the ship speed. However, the amplitude of the diffraction force will in general be speed-dependent. For more-details as to how the diffraction force can be calculated within a strip theory approximation one may; for instance consult Salvesen and all (1970). Their approach is based using Green's second identity. The formulas use the velocity potentials due to forced motion of the ship. The advantage is that it is generally more correct to use a strip theory approximation and neglect hydrodynamic interaction between the cross-sections for the forced-motion potentials than for the diffraction potentials.**
***Keywords*: Vertical wave, Froude-Krillof force, vertical ship motions**

***Abstract* - Metallic constructions of retention are complex structures which, through their structure and functionality, constitute a mobile dam which cooperate with concrete infrastructure, together forming the retention front – dam, lock – on river courses. The paper presents some types of retention metallic constructions, designed and realized at HIDROTIM S.A. by engineer's graduate of Hydrotechnical Engineering Faculty from Timişoara. The structures presented constitutes the most usual types, being mentioned that other numerous solutions were conceived and executed in order to equip hydroenergetical and thermoenergetical arrangements on national plan, in the same time being contracted, at level of execution design, works with foreign partners.**
***Keywords*: retention metallic constructions, realizations**

***Abstract*: The paper presents some modern types of retention metallic structures, of which conception follows the actual European tendencies in domain, with references at conception and execution. The solutions presented, as result of realized researches over a large number of variants, were, in part, executed in partnership with extern beneficiaries. From the obtained advantages, are mentioned the following: structure reduced weight, diminished volume of work labor in comparison with classical solutions, reduce gauge and low price of action installation, the elimination of some equipments utilized in classical system of lock functioning. As an alternative for tightness, is presented a pneumatic system of tightness for hydroenergetic arrangements with unpredictable settles. The metallic structures presented represent future equipment solutions taking into consideration the practice results of effectuated studies.**
***Keywords*: conception, retention metallic constructions, equipment solutions**

***Abstract* - The rainfall in period 11 – 12 July, in hydrographic basin of Cerna River, on torrents and interbasinal surfaces, generated a catastrophic flood, comparable with flood produced in 1940, when doesn't exists hydrotechnical works Valea lui Iovan and Herculane. In paper are presented: the launching factors of flood, the way in which were reconstitute the floods at hydrometrical station situated upstream of Valea lui Iovan reservoir, stations which were destroyed by flood wave, the translation of flood wave on Cerna River and the statistical analyze of reconstitute maximum flows.**

***Abstract*: For the computation of suspensions retaining in sedimentation tanks it is necessary to be known the settling velocity of particles w. Currently, for the settling velocity are fixed, basing on sedimentation diagrams, the most smallest particle as dimension which follows to be retained and, accordingly the settling velocity which is taking into account. Much close to reality is the analysis of sedimentation process taking in consideration the characteristics of particles in suspension, given by o distribution curve of settling velocity. It is established the settling efficiency and the turbulence influence and water flow speed over settling process starting with characteristics curves of settling velocity distribution.**
***Keywords*: sedimentation tanks, settling velocity distribution**

***Abstract* - Leakage losses represent a major problem for any water distribution network. The functioning at reduced pressure parameters, but with the flow assurance at connections in proper conditions, constitutes an objective for any modernization design of water network distribution. A solution through which can be controlled the pressure in different points or areas stays in utilizing self acting-automatic pressure control valves. The paper presents the most important types of these pressure control valves, their functioning being simulated in MATLAB in dynamic regime for different functioning scenarios. Are presented upstream, downstream pressure control valves but also upstream-downstream, less discussed. The study of these pressure control valves allowed a detailed analysis of all integration implications of these in system.**
***Keywords*: self acting-automatic, pressure control valves, water distribution systems**

***Abstract* - Classical ring-shaped analysis of network distribution involves two main stages resolved separately: a – the choose of an initial distribution on sections which must satisfy the continuity condition of flows at knots and b – the correction of these flows till the continuity condition of energy on independent loops is satisfied. Through convenient transformations done over the incidence matrices knot – section are established automatic, without user interventions, through a unitary method, an initial solution, o loops structure which cover the network and the final flows on network distribution sections. Other hydraulic parameters of distribution network (speed, piezometric quotations, available pressures, etc.) are obtained by additionally procedures.**
***Keywords*: water distribution systems, classical ring-shaped analysis, network**

***Abstract* - The paper presents results of metrological verification realized for a flowmeter, utilizing a stand completely automatic. It is argue the utilization necessity of complete automatic checking stands because of the large number of flowmeters in function and which will serve as base of an informatics management system, indispensable for a modern exploitation of water distribution network. It is presented the stand principle of realization and function, with the possibility to investigate the entire area of flows. The results argue that flowmeter testing in an insufficient number of points from characteristic can metrological validate device totally improper.**
Keywords: automatical stand, flowmeter calibration, metrological verification

***Abstract* - Settling ponds from mining industry are constructions of a type more special than hydrotechnical constructions for water retention. These are modifying their dimensions during the material settling behind outline dams. In the case of a break outline dam appear movements of solid material different in comparison with water wave in the case of a break barrage. The experiments done on physical model at low scale at the National Institute of Research-Development for Environment Protection emphasize the transport way of material settled in a settling pond. The material utilized at experiments was bringing from settling pond beach Valea Şesii from Mining Exploitation of Copper Roşia Poieni.**
***Keywords*: material behavior, settling pond, mining industry**

***Abstract* - In paper is presented a study of wastewaters from slaughter houses, especially regarding the containing in proteins, the possibility to separate proteins from these waters by salting out method, their purification and characterization by gel-chromatography as well as the using of recuperated proteins as a surplus for hen's food. The experimented procedure can be constituted in the base of some water and soil protection arrangements, connected and with the recover of some useful materials – the proteins.**
***Keywords*: protein separation, wastewater, fodder admixture**